

ABSTRACT

A microturbine for the generation of mechanical and electrical power comprising a positive displacement axial vane rotary compressor and an axial vane rotary expander. The compressor and expander are joined by a common shaft. The system further includes at least one combustor for heating a driving fluid prior to its entering the expander. The driving fluid, such as air, enters the compressor at ambient conditions of pressure and temperature and is compressed. The compressed driving fluid is preheated by the exhaust from the expander, then passes through a combustor to bring its temperature to a desired expander inlet temperature and then enters the expander where the expansion force of the hot driving fluid acting against the vanes of the expander is translated into rotation of the common shaft for driving both the compressor and a suitable power device such as an electrical generator.